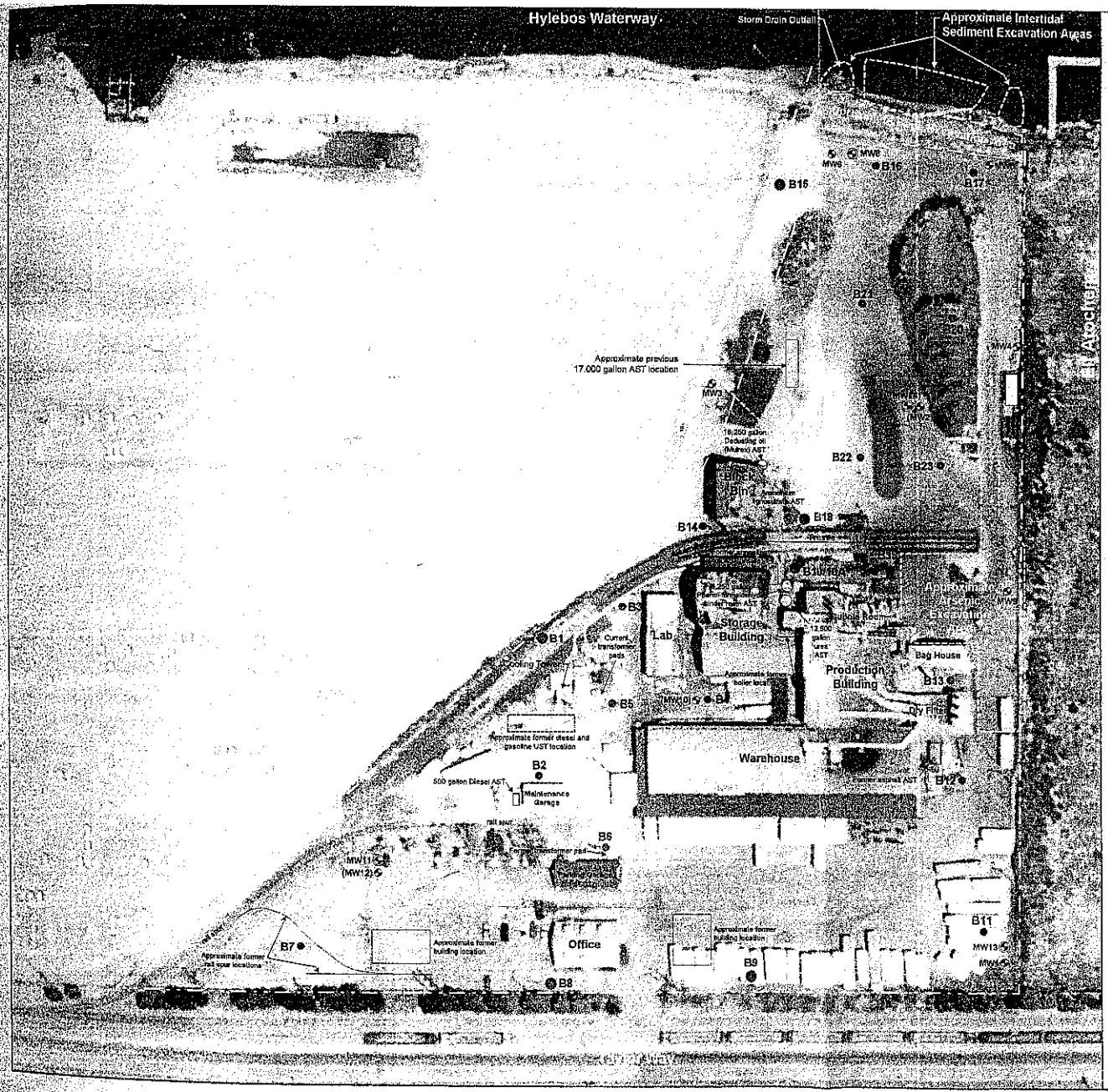


LEGEND:

- ● B2 — Approximate soil sampling location and boring designation
- ● B1 — Approximate soil and reconnaissance groundwater sampling location and boring designation
- MW8 (MW12) — Approximate shallow aquifer groundwater monitoring well location and designation (parentheses indicate that the well was not sampled)
- MW8 (MW10) — Approximate intermediate aquifer groundwater monitoring well location and designation (parentheses indicate that the well was not sampled)

NOTES:

1. All locations are approximate.
2. Samples were collected by Kennedy/Jenks Consultants between 28 October and 1 November 2002.
3. Approximate previous excavation areas are based on maps provided in reports prepared by AGI (1996, 1997a, 1997b, 2000).

0 100 200
Approximate Scale in Feet

N

Kennedy/Jenks Consultants

THERMAFIBER FACILITY
2301 TAYLOR WAY
TACOMA, WASHINGTON

SITE OVERVIEW MAP

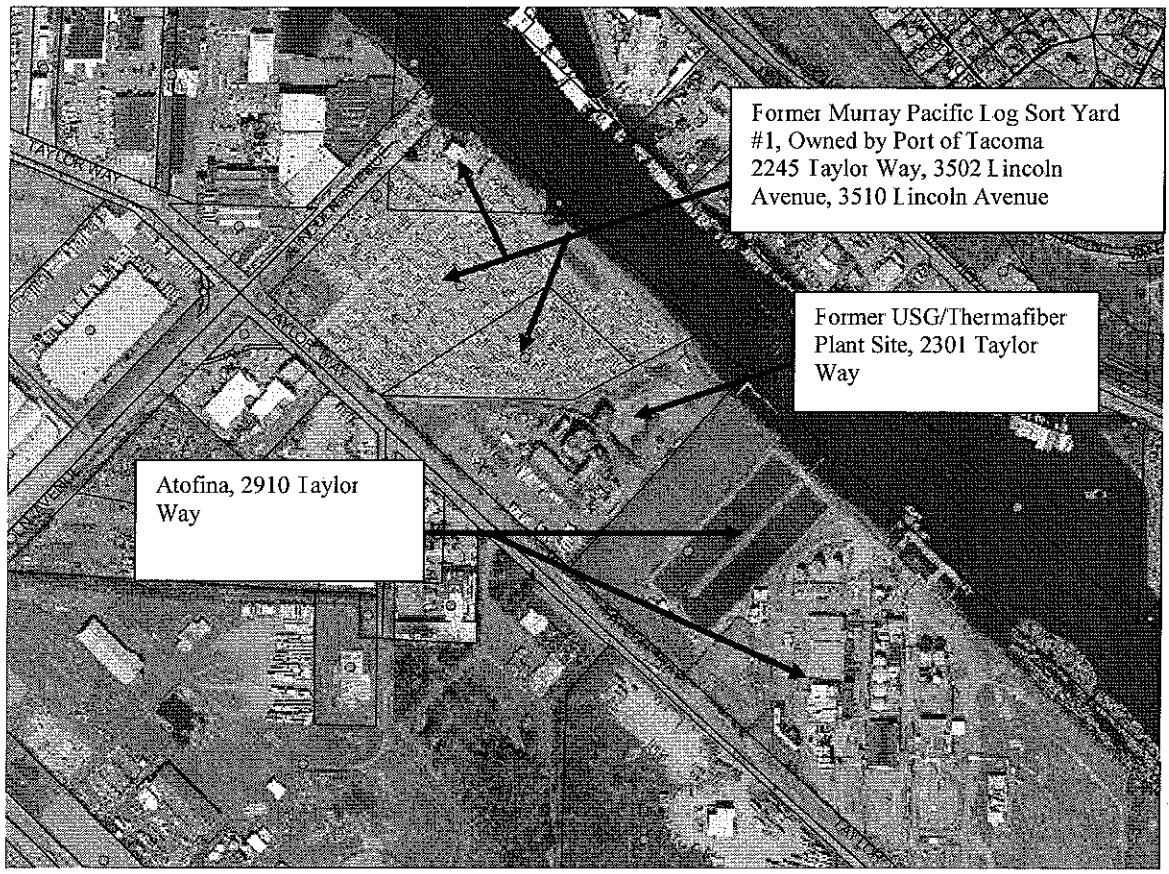
026130.00/FIGURE3.VSD

FIGURE 3

AGREED ORDER No. DE3405
EXHIBIT A – SITE MAP

AGREED ORDER No. DE 3405
Former USG Interiors Plant Site

EXHIBIT A – 1
Site Vicinity Map



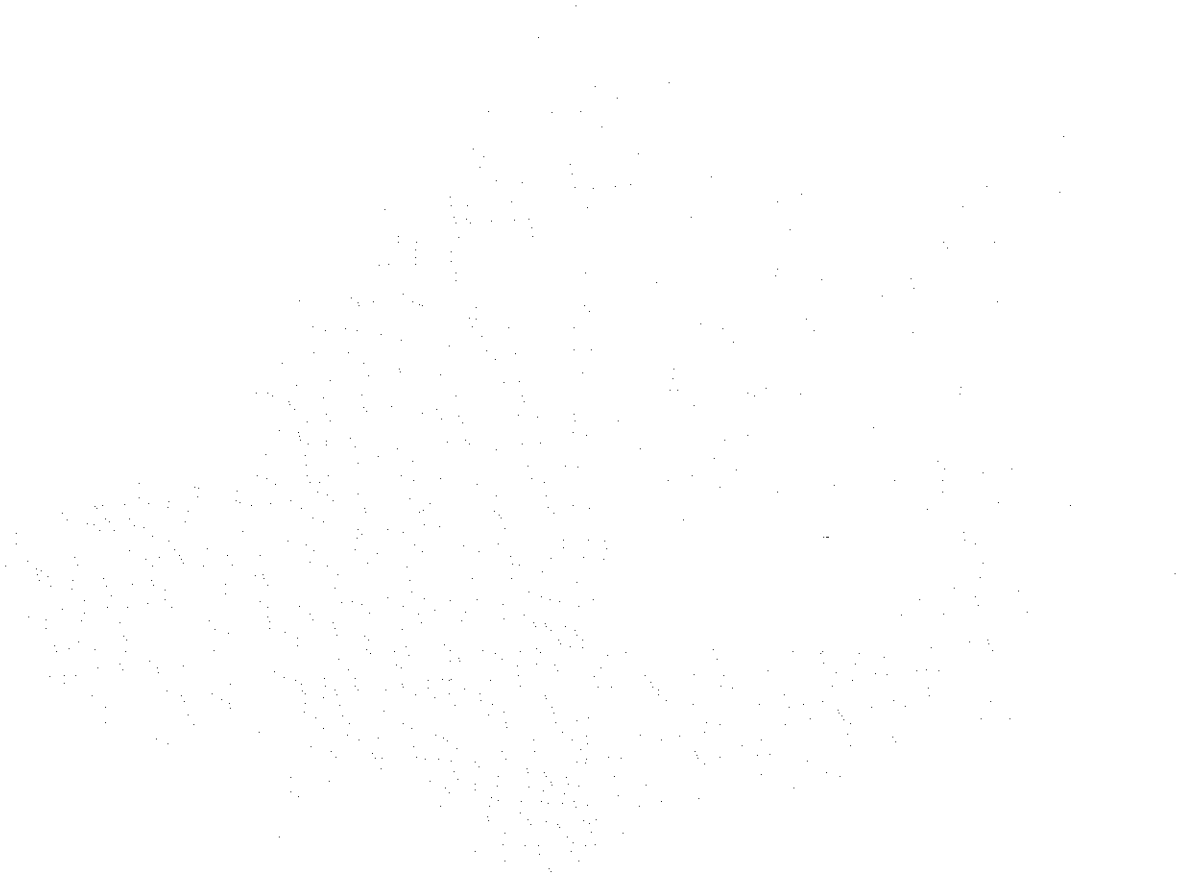


EXHIBIT B: Summary of Reports and Site Activities

USG Interiors Reports

3/94: Final Work Plan, Phased RI
4/94: Storm Drain Work Plan: install new pipe section w/ tide valve at outfall and clean out system (new pipe section put on hold until paving/storm drain project).
5/94: Phase I RI: 4 pt. soil composites 4 locations (only to 6-12" deep), 6 boreholes
11/94: Storm Drain Cleaning Summary: system pressure cleaned
2/95: Phase II RI: 5 2nd aquifer wells, 3 additional surface wells, soil samples collected from borings, sampled 4 seeps
6/95: Technical Memo, GeoMedia, Arsenic Levels and Groundwater Flow Directions near the Salt Pads
2/96: Final source control plan – interim actions: berm interim action, bank investigation/excavation; replace storm drain lines, monitor sw, gw, seeps (contains good summary of RI)
2/96: Final Interim Action Work Plan: Berm Evaluation and Disposal
4/96: Laboratory Data – Berm and Tidebank Soils
7/96: Draft interim action work plan – bank excavation and restoration
7/96: design report – paving and stormwater discharge system improvements
10/96: Berm Evaluation and Disposal
2/97: Supplemental Tidebank Investigation Results
3/97: Hydrocarbon Remediation
6/97: Interim Action Work Plan – Bank excavation and Restoration
12/97: Bank Excavation and Restoration Report
7/98: Design Report – Paving and stormwater Discharge
10/98: Addendum #1, Bank Excavation and Restoration Report
12/98: Soil Quality Assessment (MW-9 Area)
3/99: Revised Addendum #1, Bank Excavation and Restoration
8/99: Appendix to Ecology Milestones for Head of Hylebos Waterway – Tech Memo – Analysis of the Potential for Upland Groundwater to Contaminate Sediments in the Head of Hylebos Waterway.
6/00: Final Source Controls Implementation

USG Interiors Groundwater Monitoring Reports

May 20, 1998 – Groundwater and Seeps
December 18, 1998 - Groundwater
July 19, 1999 – Groundwater, Seep, Storm Drains
May 16, 2000 – Groundwater and Storm Drain
August 7, 2000 – Groundwater and Storm Drain
October 17, 2000 – Groundwater and Seeps
January 16, 2001 – Groundwater and Storm Drains
March 6, 2001 – Groundwater and Storm Drains
June 15, 2001 - Groundwater
September 14, 2001 - Groundwater
June 26, 2002 – Groundwater Monitoring and Summary Evaluation – groundwater, seeps, stormwater

Port of Tacoma/Thermafiber Reports

Phase I and Limited Phase II Environmental Site Assessment, Kennedy/Jenks Consultants, December 6, 2002
Former Thermafiber Site Soil Removal and Waste Disposal Report, Kennedy Jenks Consultants, November, 2003

2004 Soil Sampling Summary Report (for Carlilie Trucking Preload), Kennedy Jenks Consultants, November 11, 2004.
Soil Sampling Summary Report, Port of Tacoma, Carlilie Leasehold, Kennedy Jenks Consultants, March 11, 2005. (Supersedes November 11, 2004 report).

Work Done by USG – 1996 - 2002

Berm Evaluation and Disposal; 10/23/96:
19 segments, 23-30 feet long. 5 point composite from 6-8" deep at excavated surface. Additional excavation occurred in segment 1-12 because exceeded cleanup levels (MTCA industrial). Segments 1, 3, 4, and 5 had to remove 3-4 extra feet below surrounding grade. Also segments 6-12 were eventually overexcavated to below 7' below grade because they were also part of the hydrocarbon area. Soils left in place were up to 210 ppm arsenic at up to 4' below grade.

Bank
12/97: Bank Excavation and Restoration Report
10/98: Addendum #1, Bank Excavation and Restoration Report
3/99: Revised Addendum #1, Bank Excavation and Restoration
EPA found some confirmation samples did not meet the Sediment Quality Objectives. USG re-excavated that area. Ecology and EPA agreed that all samples in the end met the standards.

Paving/Storm Drain
Final Source Control Plan – Interim Actions – 2/96: Conceptual idea
Design Report - 7/98: Ecology approved
Final Source Controls Implementation 6/00: Did not pave over former berm footprint as plans were to build new rail spur there. Paved area between bank and older concrete slab, and also included paving in MW 9 area after excavated. Included complete replacement of existing stormwater system along northwest side of Taylor Way Property (not originally slated for replacement but found arsenic infiltration to stormwater). Entire Taylor Way Property storm system is now new. Used HDPE pipe w/ welded joints. pipes pressure tested. There is a lift station & pressure line from cb1 & 2 to vault at MH1. There are 5 type 2 sediment control cb's & 10 type 1 cb's.

Hydrocarbon Remediation 1997
Work carried out separately from Ecology Order. 5000 tons soils contaminated with bunker C/heavy diesel removed. Source was above ground storage tanks. Extended onto the former Murray Pacific property, now owned by the Port of Tacoma (current property addresses 2245 Taylor Way, 3502 Lincoln Avenue, and 3510 Lincoln Avenue). Dug down to silt layer. TPH smear zone 2-3' above silt layer. Base & sidewall samples were not detected (except on one sidewall contained 98 ppm oil). Groundwater contained diesel/oil. They kept pit open & soaked up sheen w/ pads. Then pumped water & sprayed back into excavation w/ added 'nutrients' to promote microbial degradation of the TPH – levels of TPH dropped off from 24 ppm to 2.2 ppm. Still above cleanup standards. Filled hole back in.

MW-9 Soil Remediation
Excavated soils delineated between hazardous/non-hazardous (based on TCLP). Much of upper 1-2 feet was hazardous – 1,358 tons haz waste & 2740 tons subtitle D. Excavation extended into Elf Atochem property (2901 Taylor Way; aka Atofina property or Arkema property) approximately 5 feet past where visible mineral fiber and black vitreous materials were visually removed. Sidewall samples on Atochem property (SW 27-30) boundary still high in arsenic (up to 640 ppm). USG did not clean up as they believe the arsenic is from operations at Atochem site.* Excavation based on meeting MTCA, Method A Industrial

standard – (however this was an interim action and now the level has changed to 20 ppm, and may not be protective of groundwater).
One base sample (B13) of 290 ppm at 2' deep, other base samples 3-4' deep 270 & 240 ppm. Few others between 1-200. 11 of base samples were under 40 ppm, with several of those ND. 4 sidewall samples close to building foundations at depths of 1-3' contained 380 to 460 ppm arsenic. Assumed clean under buildings since they were in place prior to use of Asarco slag.

*Arsenic on Atochem: July 11, '95 memo from Atochem to Joyce Mercuri contains data from the fill materials on the Atochem site next to USG in this area – that shows fairly low levels of arsenic (high around 50 ppm). However, the fill appears to be on top of the area where the confirmation samples from the MW 9 excavation were taken. Additional information is needed about vertical and lateral extent of arsenic contamination on this property boundary.

Post-Interim Action Monitoring by USG

The Final Source Control Plan – Interim Actions (AGI, 2/12/96) required quarterly sampling of monitoring wells and embankment seeps for 3 years, and wet and dry weather stormwater sampling quarterly, for 2 years.

Groundwater: MW 1 has highest levels of arsenic (520 ppb from June 2002 monitoring report). Regional hydrogeology not clear if this is upgradient of MW9 source area, or is possibly affected by Atochem. Boring at this location did not contain especially high arsenic. High arsenic still present in other wells (120 ppb at MW2; 85 ppb MW3; 160 ppb MW9). 2 surface aquifer wells closest to waterway have relatively low arsenic. Not clear if these represent discharge from Taylor Way Property groundwater or if there is a more cross gradient toward Murray Pacific.

Seeps: Seeps were supposed to have been sampled but often were not identifiable when attempted to sample – especially after the bank remediation work occurred in '97. The most consistently present seeps were during 4/98 and 4/99. At that time they contained up to 90 ppb arsenic and 130 ppb zinc. Seep 3 contained 260 ppb arsenic in 8/00. After 10/00, no seeps were identified.

Storm Drain: Storm water was required to be analyzed during dry and wet weather events. After the storm drain lines were replaced, no dry weather events were present. Wet weather storm events were sampled in 11/00, 1/01, 6/01, and 8/01. Arsenic was present in each event – ranging from 17 to 120 ppb. Analysis was for total and dissolved metals, and both were present at similar levels. Copper was present at up to 22 ppb, chromium at 16 ppb, lead at 150 ppb, nickel at 23, and zinc at 120.

Work done by Thermafiber/Port of Tacoma/Carlilie Trucking/USG 2002-present

December 6, 2002-Phase I and Limited Phase II Environmental Site Assessment; Kennedy/Jenks Consultants. Found slag and waste on outer 2' of rail berm in westerly corner of Taylor Way Property. Found petroleum contaminated area between old above ground tank area and building.

November, 2003- Soil Removal and Waste Disposal Report, Kennedy Jenks Consultants. Removed 1006 tons of hazardous waste from old railroad berm, and combined rest w/ petroleum removed. *No confirmation samples underneath berm.* Excavated oily area waterward of old buildings – between buildings and former hydrocarbon removal area. Removed diesel/oil above 2,000 mg/kg, 7-12 bgs. Sidewalls and bottom were generally quite low except for waterward edge had 1930 and 1860 ppm diesel and oil respectively. BTEX, PCBs not detected. Some PAH detected below MTCA "A" industrial. Dewatering

water contained 553 ppb arsenic. Hole backfilled with blast furnace slag – tested for priority pollutant metals and were below MTCA standards.

September-November, 2004 – Port of Tacoma consulted with Ecology about need to preload for warehouse building. Ecology requested that contaminated soils beneath the preload area be removed before adding preload so that future Site work would not preclude cleanup in that area. Soil sampling beneath preload area by Kennedy/Jenks – report done 11/11/04, superseded by March 11, 2005 Soil Sampling Summary Report, (K/J-496016). Sample B109 contained 1100 ppm at the surface. Sample B-1-3 contained 240 ppm arsenic at 3 feet deep. This area was excavated to 3 feet deep. Groundwater was encountered at 3.5 feet depth. A second part of the preload was excavated to 2 feet deep – 2' depth samples in this area (prior to excavation), contained only 13 ppm and <5 ppm arsenic. No confirmation samples were obtained from either excavation area. The remainder of the preload area was not overexcavated.

April, 2005 - Ecology requested the Port of Tacoma to voluntarily install five test pits around the edge of the imported soil of the building preload to attempt to identify if arsenic remained in the soils underneath the building location. Samples from the test pits indicate that some arsenic above the MTCA, Method C, industrial cleanup level remains inTaylor Way Property soils beneath the building footprint. Documentation for this work was faxed to Ecology.

June, 2005 - USG voluntarily excavated soils up to 6 feet deep in two areas of the Taylor Way property where higher levels of arsenic had been identified in the Phase I and Limited Phase II Environmental Site Assessment. These areas are adjacent to the soil removal from an earlier interim action conducted under the 1994 Agreed Order. Ecology will review the results from confirmation sampling at those excavation areas when they are reported with the Supplemental RI required under this Order.

August, 2005 – During construction activities to develop the Carlilie Trucking Facility at the Taylor Way property, the Port of Tacoma and Carlilie's contractor (Donovan Construction) discovered and removed two previously undocumented underground storage tanks. Documentation of this removal was submitted to Ecology on November 15, 2005.

EXHIBIT C: Work Plan and Schedule
(Under Separate Cover)

Exhibit C to Agreed Order No. DE3405 Between the Department of Ecology, USG Interios, Inc. and the Port of Tacoma

Final Work Plan
Supplemental Remedial Investigation
2301 Taylor Way
Tacoma, Washington
June 27, 2006

Prepared for USG Corporation and Port of Tacoma by CDM
CDM project no 19921.38072.Tacoma RT

CDM

Exhibit C to Agreed Order No. DE3405 Between the Department of Ecology, USG Interiors, Inc. and the Port of Tacoma

Final Work Plan
Supplemental Remedial Investigation
2301 Taylor Way
Tacoma, Washington

June 27, 2006

Prepared For:

USG Corporation
125 South Franklin Street
Post Office Box 6721
Chicago, Illinois 60680-6721

and

Port of Tacoma
P.O. Box 837
Tacoma, Washington 98401

Prepared By:

CDM
11811 NE 1st Street, Suite 201
Bellevue, Washington 98005

CDM Project No. 19921.38072.Tacoma RT

Agreed Order No. DE 3405

EXHIBIT D

Substantive Requirements of State and Local Laws and Regulations

Pursuant to RCW 70.105D.090(1), remedial actions under this order are exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 75.20, 90.48, 90.58 RCW, and from any laws requiring or authorizing local government permits or approvals for the remedial action. However, remedial actions under this order must still comply with the substantive requirements of these laws. Ecology has consulted with state and local agencies and has identified the following substantive requirements that may be applicable to the actions to be performed under this order.

- RCW 70.95 - Solid Waste Management – Reduction and Recycling; RCW 70.105 - Hazardous Waste Management; Chapter 173-303 WAC Dangerous Waste Regulations; Local County Health Department (Waste Disposal Authorization)
  Substantive requirements: Designate all solid and liquid investigation derived wastes to determine if they are dangerous wastes. For all solid wastes that are not designated dangerous waste, dispose of at a permitted Subtitle D landfill facility, after completing the county health department requirements for waste screening and disposal authorization, of any county where waste will be disposed. For any wastes designated as hazardous or dangerous wastes, obtain a Hazardous Waste Identification number from Ecology, dispose of at a permitted Subtitle C landfill, and document the disposal according to the hazardous waste manifest requirements of Chapter 173-303 WAC. Provide documentation to Ecology for the disposition of all wastes generated under the activites in this order.

- Chapter 90.48 RCW - Water Pollution Control; City of Tacoma Municipal Code – Chapter 12.08 City Code (Provisions for Acceptance for Discharges to Sewer System);
  Substantive Requirements: No waters generated from the Remedial Investigation shall be discharged to the ground, surface waters, or storm sewer systems. For any investigation derived water waste generated from the Remedial Investigation, dispose of at a facility which is permitted under the Clean Water Act to accept the waste water. Any discharges to the City of Tacoma sewer system must meet all requirements of the Special Approved Discharge Authorization, City of Tacoma Municipal Code, Chapter 12.08.365. Provide documentation to Ecology for the disposition of all wastes generated under the activites in this order.